

NATO SAS RTG -074 Tool for Integrating Social Science into NATO's Approach to Operations: Overview and User Guide

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ABSTRACT

This paper provides an overview and top-level user guide for a prototype visual knowledge tool developed by NATO SAS RTG-074 which promotes the integration of human and social sciences into NATO's Operational Planning Process and associated Operational Analysis (OA).

1.0 OVERVIEW

While conceptualizing military action in kinetic terms concerned with the destruction of enemy assets is as old as war itself, NATO's current approach to conducting operations demands a comprehensive approach as the commander seeks to induce desired change from the use of armed forces and other levers of coalition influence. This is exemplified in General Petraeus' operational guidance which highlights the Afghan population, rather than the Taliban, as the Centre of Gravity for ISAF operations. Successful application of this approach requires both a long-term evolution of military capabilities, and an improved understanding of the way the human and social dimension operates.



Figure 1: "Understanding the Human Dimension Assumes New Importance"¹.

The SAS-074 task group is developing guidance which enables operational analysts and planners to identify, and make effective use of, theories, methods and models (TM&Ms) that are based upon the social sciences. The guidance is being developed using a collaborative Concept Mapping approach which visually maps knowledge and provides links to related internet resources. The approach has been aligned to NATO's Operational Planning Process (OPP). A simplified view of how the guidance supports the Orientation and Concept Development phases of the OPP is shown in Figure 2.

¹ US Army Human Terrain Team Photo.

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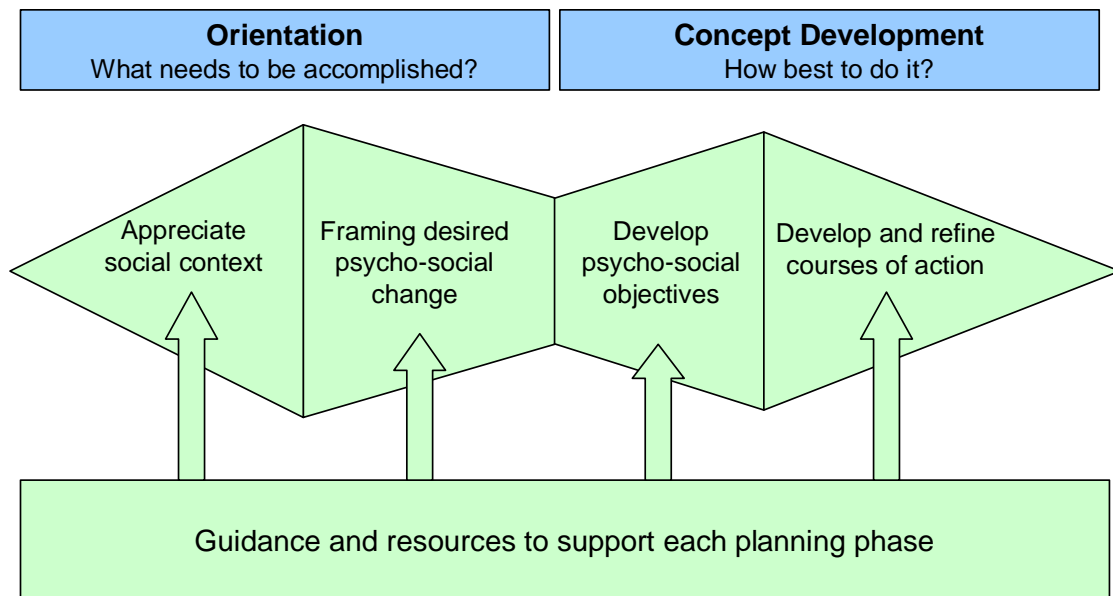
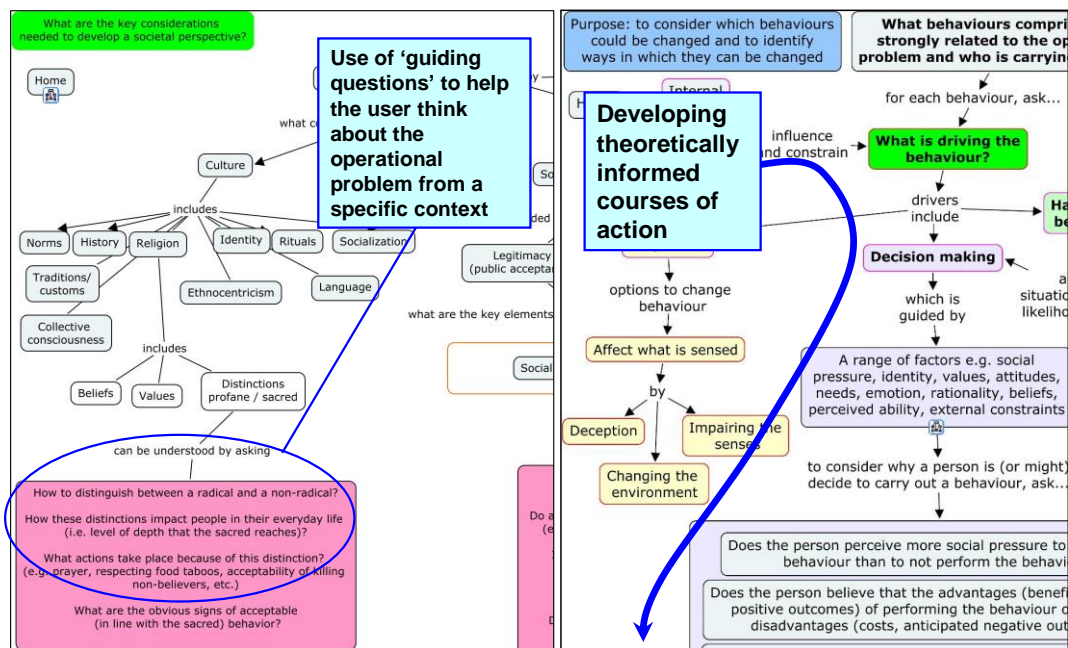


Figure 2: SAS-074 Guidance directly supports the Orientation and Concept Development phases of NATO's Operational Planning Process.

The Orientation phase guidance provides operational analysts and planners with 'guiding questions' to help develop their understanding of the psycho-social context and frame potential psycho-social change. It currently covers 5 key areas: psychological, organizational, societal, economics and governance. The Concept Development guidance provides information on a broad range of topics including: how social theories can be used to inform approaches to obtain behavioural change at the individual, organizational and societal levels; selection of fit for purpose TM&Ms; the utility of alternative analytical approaches; approaches for gathering empirical data; and, online socio-cultural data sources. Excerpts from a couple of the knowledge maps are shown in Figure 3.



3a: Societal guiding questions

3b Applying behavioural change theory

Figure 3: Concept Map Excerpts.

An initial version of guidance has been developed. They are available as concept maps which may also be viewed as web pages. It will be refined and further developed in 2010 and early 2011. It will also be subject to a series of end-user evaluations being scheduled within the participating nations. To gain access to the development version of the tool, or for further details, contact Phil Jones, the SAS-074 lead (prjones@dstl.gov.uk).

2.0 SAS 074 TOP-LEVEL USER GUIDE

2.1 Objectives

The primary objectives of the tool are to:

- Help operational analysts and planners consider psycho-social factors within the Orientation and Concept Development stages of NATO's Operational Planning Process (OPP). See Figure 3 and AJP-5 for further detail.
- Provide a knowledge base of open-source information on:
- Human /social science theories, methods, models, and data collection approaches
- Operational Analysis techniques.

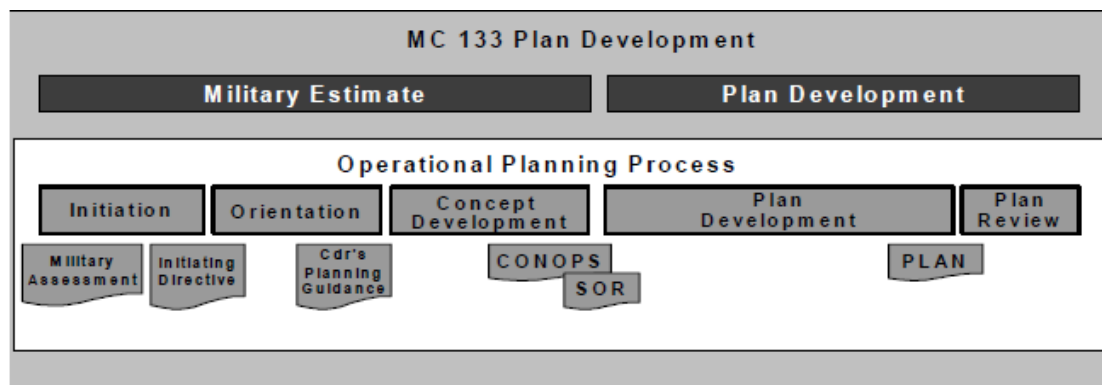


Figure 3: An Overview of NATO's Operational Planning Process.

It may also be used to:

- Support other stages of the OPP, especially the Initiation stage, and may also be used to support Strategic and Tactical planning levels.
- Help human and social scientists and operational planners to understand Operational Analysis approaches.

2.2 Content

This top-level user guide provides:

- A fitness for purpose statement.
- A brief overview of concept mapping and Cmaptools – further detail can be found on the developer's website: <http://cmap.ihmc.us/>.
- A basic guide to use of the tool. Separate guides for use within the Orientation and Concept Development phases are also provided within the tool itself in both tabular and concept map form.

2.3 Fitness for Purpose

The tool has been developed by the NATO Research and Technology Organisation (RTO) Systems Analysis and Studies (SAS) panel Research Task Group (RTG) 074 to provide a basic 'proof of concept' tool for use by NATO nations. To a large extent the content of the tool reflects the expertise of the participants of the group and the level of effort they were able to expend on the task. It therefore contains omissions and areas that require further development. Nations wishing to make operational use of the tool are encouraged to undertake their own test and validation activities, and to develop it further to meet their specific needs.

Ideally, some familiarisation training is required to help navigate around the tool. In the absence of such training the user guides are intended to provide a basic understanding of how to use tool.

The tool covers knowledge drawn from a wide range of human, social and Operational Analysis scientific domains. By design, it aims to provide you with a 'tool for thinking' that will provide you with basic familiarity of these domains. It will not make you an expert in them all! Thus, you should still seek to make extensive use of both scientific domain and Area of Operations Subject Matter Experts (SMEs).


It should help you to identify appropriate SMEs and ask them the right questions, but it will not provide you with all the context-dependent answers.

Users can easily add their own material. This is a significant strength of the concept mapping approach, but it may create configuration control, validation and software accreditation issues.

2.3 Use of CMaptools

Concept maps are graphical tools for organising and representing knowledge. They include concepts, usually enclosed in boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Linking phrases on the connecting lines specify the relationship between the two concepts.

Basic operations:

- Clicking on an icon at the bottom of a concept and selecting one of the resources displayed will open that resource. This may be any kind of document, an internet url or another concept map.
- Right clicking on a concept opens a menu to allow the user to add further resources or add 'mouse over' information.
- Left clicking on a concept brings up a  icon at the top of the concept. Drag and drop from this to create a new concept and a blank linking phrase.
- The zoom feature, particularly the 'fit to page' option, in the toolbar is often useful.

Much more information on Cmaptools functionality can be found using the toolbar help option.

CMaps may also be viewed as html web pages, if they are held on a CMap Server (CMapServer software is also available from <http://cmap.ihmc.us/> to do so). At the time of writing (Aug 10), use of the web page version has a couple of limitations:

- The mouse over function does not work (A significant drawback since we have used this feature to provide greater detail and definition of many of the concepts).
- The zoom function (bottom right hand corner of Internet Explorer) works well, but when you click to see resources, they will not appear where you expect them to.

The developers have been made aware of these limitations, so they may be resolved in due course.

2.4 How to Use the SAS -074 Tool

The *SAS074 Process View* Cmap is the 'home page' which will normally be your starting point. Figure 4 is an annotated screenshot. The key features are numbered and described in Table 1.

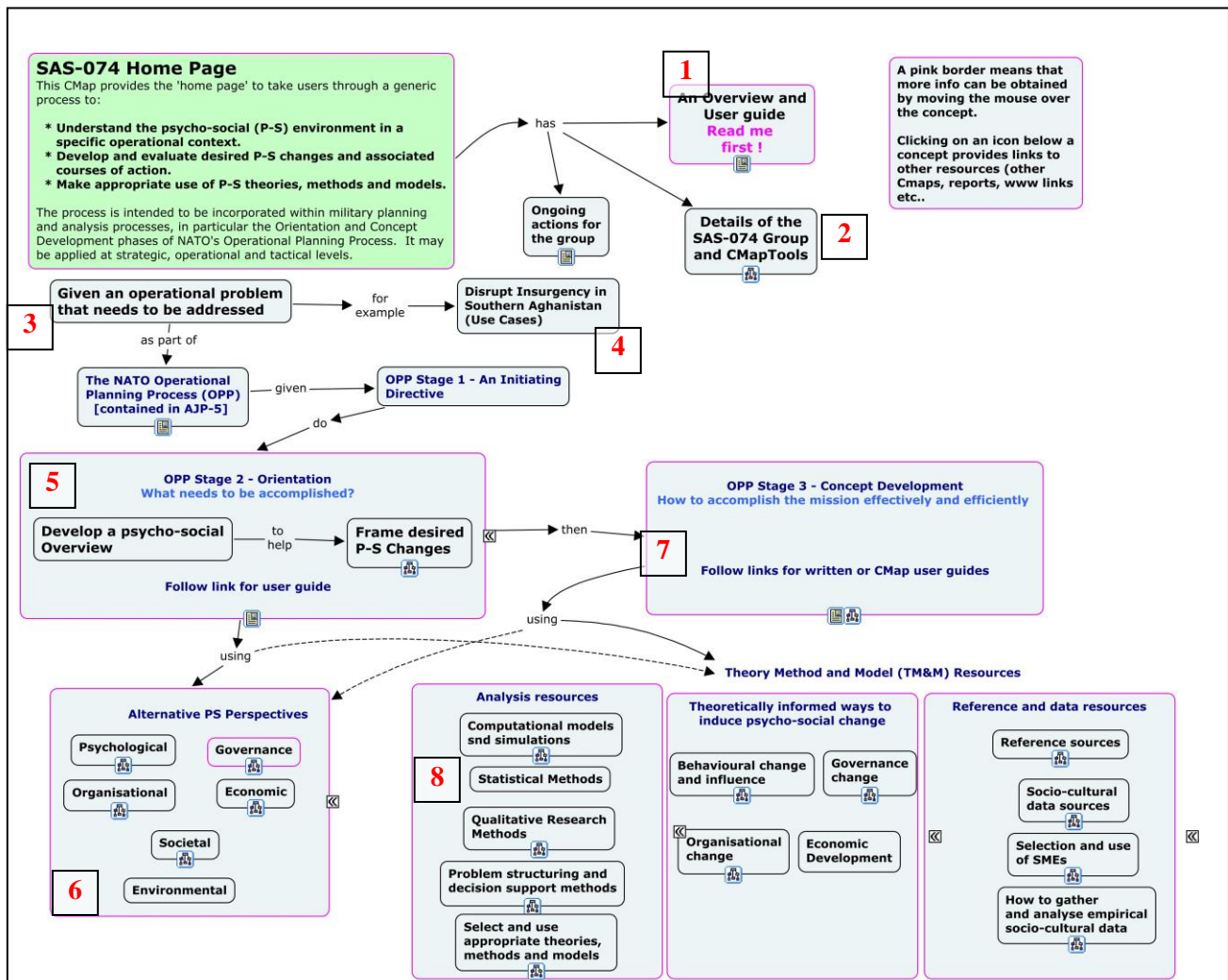


Figure 4: SAS074 Process View: The Home Page.

Table 1: SAS-074 Process View: Key Features.

Item	Description
1	User Guide Resources linked to this concept include this user guide and a short overview
2	Background Information The associated Cmap gives details of the group, its terms of reference, programme of work and technical activity proposal. It also contains links to resources offering 'best practice' for creating concept maps.
3	The Operational Planning Process The tool is aligned to NATO's Operational Planning Process. A link to the Allied Joint Publication 5 (Operational Planning Doctrine) is provided. National planning processes are usually similar. However, the tool is likely to have utility throughout the planning process and may also be used independently of formal planning processes.
4	The Initiating Directive (AJP-5 Chapter 4, Section 3, Stage 1) As a working assumption, it is assumed that an Initiating Directive has been produced which establishes the requirement to conduct operational planning as well as the general planning direction and planning limitations. See for further detail
5 & 6	Orientation phase (AJP-5 Chapter 4, Section 3, Stage 2) The purpose of the Orientation stage is to determine <i>what</i> must be accomplished to meet the higher authority's direction and guidance. Part 2 of this user guide is linked to the Orientation phase concept (Item 5). It highlights how the tool can be used to support the Orientation phase described in AJP-5. It makes use of the <i>Alternative P-S Perspective</i> concept maps below (Item 6), and some of the <i>Theory, Method and Model</i> resources (Item 8). A number of Concept maps are provided (item 6) to help the user get an overview of the strategic context from a range of P-S perspectives. In each concept map, some of the key ideas from the discipline are highlighted, together with a series of 'guiding questions' that aim to get you to get an appreciation of the context from this perspective. To answer these questions, the user is likely to need to make use of both socio-cultural data sources, SMEs and Intelligence sources. Item 8 contains links to useful open source socio-cultural data sources and provides advice on SME selection. An understanding of the P-S context enables appropriate objectives and tasks to be developed.
7 & 8	Concept Development phase (AJP-5 Chapter 4, Section 3, Stage 3) The purpose of the Concept Development stage is to determine <i>how</i> best to carry out operations that will accomplish the mission effectively and efficiently. Part 3 of this user guide is linked to the Concept Development phase concept (Item 7). It cross-references specific activities within the Concept Development phase, with the <i>Theory, Method and Model</i> resources (Item 8). The <i>Theory, Method and Model</i> resources provide a broad range of knowledge in the following areas: <ul style="list-style-type: none"> • Suggestions for how to develop courses of action that are theoretically informed (e.g. by behavioural change theory). • Overviews of modelling approaches and how to assess their fitness for purpose. • Reference sources. • How to select and make effective use of SMEs • Approaches for gathering empirical data – essential if you are to get a nuanced understanding of the P-S situation, to allow you to take effective action.

